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| APPLICATION NO.                                                   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
|-------------------------------------------------------------------|-------------|----------------------|-------------------------|------------------|
| 10/659,842                                                        | 09/10/2003  | James P. DeYoung     | 5697.57CT               | 5522             |
| 20792                                                             | 7590        | 10/14/2004           | EXAMINER                |                  |
| MYERS BIGEL SIBLEY & SAJOVEC<br>PO BOX 37428<br>RALEIGH, NC 27627 |             |                      | CARRILLO, BIBI SHARIDAN |                  |
|                                                                   |             |                      | ART UNIT                | PAPER NUMBER     |
|                                                                   |             |                      | 1746                    |                  |
| DATE MAILED: 10/14/2004                                           |             |                      |                         |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                                                                        |  |
|------------------------------|-------------------------------|------------------------------------------------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/659,842 | Applicant(s)<br>DEYOUNG ET AL. <span style="float: right;">S.e.</span> |  |
|                              | Examiner<br>Sharidan Carrillo | Art Unit<br>1746                                                       |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-28 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                                 |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/15/2003</u> . | 6) <input type="checkbox"/> Other: _____                                                |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 20, 22-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Xu et al. (US2003/0125225).

Xu et al. teach a supercritical fluid composition comprising supercritical carbon dioxide, co-solvents, surfactants, and active agents (hydrogen fluoride-pyridine). The limitations of an adduct are inherently met since Xu et al. teach the same composition as the instantly claimed invention. In reference to claim 20, paragraphs 51-52 teaches that the above components can be present at concentrations of about 0.1% to 50% by weight. In reference to claim 22, the limitations are met since the pKa is a chemical property of the composition and Xu et al. teach the same Lewis base as the instantly claimed invention. In reference to claim 23, refer to paragraph 43. In reference to claims 24-25, refer to paragraph 34. In reference to claim 27, refer to paragraph 32. In reference to claim 28, the limitations are inherently met since the density is a chemical property of the composition and Xu teaches the same composition as the instantly claimed invention.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1746

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 20-25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaartstra (6666986).

Vaartstra teaches supercritical etching compositions. In reference to claim 20, col. 3, lines 45-65 teaches a composition comprising amine (Lewis base), hydrogen halide (HF), carbon dioxide, co-solvents, and surfactants (col. 6, lines 1-15, col. 10, lines 39-40). The limitations of an adduct are inherently met since Vaartstra teaches the same composition as the instantly claimed invention.

Art Unit: 1746

In reference claims 20, 24, and 25, Vaartstra fails to teach the concentration ranges. Concentration limitations are obvious absent a showing of criticality. *Akzo v. E. I. Du Pont de Nemours* 1 USPQ 2d 1704 (Fed. Cir. 1987). In reference to claim 21, refer to col. 11, claim 10. In reference to claim 22, the limitations are met since the pKa is a chemical property of the composition and Vaartstra teaches the same Lewis base as the instantly claimed invention. In reference to claim 23, Vaarstra fails to teach triethyl amine. However, it would have been within the level of the skilled artisan to modify the method of Vaarstra to include triethyl amine since Vaarstra teaches amines and further teaches dimethyl amine (col. 9, lines 11-12). In reference to claim 27, refer to col. 4, lines 58-60. In reference to claim 28, since Vaarstra teaches the same composition as the instantly claimed invention and since the density is a property of the composition, one would reasonably expect the composition of Vaarstra to process the same density characteristics.

7. Claims 20, 22, 24-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeSimone et al. (6763840).

DeSimone et al. teach a composition comprising liquid carbon dioxide and an adjunct. The adjunct can be selected from various adjuncts including HF acid, bases (i.e. secondary and tertiary amines), solvents, surfactants, and mixtures thereof. In reference claims 20, 24, and 25, DeSimone et al. fail to teach the concentration ranges. Concentration limitations are obvious absent a showing of criticality. *Akzo v. E. I. Du Pont de Nemours* 1 USPQ 2d 1704 (Fed. Cir. 1987). In reference to claim 26, refer to col. 3, lines 45-48. In reference to claim 22, the limitations are met since the pKa is a chemical property of the composition and DeSimone et al

Art Unit: 1746

teaches the same Lewis base as the instantly claimed invention. In reference to claim 28, refer to col. 6, lines 17-25.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vaartstra teaches a supercritical etching composition. Masuda et al. teach an etching composition. DeSimone et al. teach a supercritical or liquid CO<sub>2</sub> composition. Cottee et al. teaches supercritical CO<sub>2</sub>.

8. The restriction requirement is maintained for the reasons set forth in the previous Office Action. In response to claims 29-36, the claims were not addressed because they were cancelled by the Preliminary Amendment of 9/10/2003.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharidan Carrillo whose telephone number is 571-272-1297. The examiner can normally be reached on Monday-Friday, 6:00a.m-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sharidan Carrillo


Application/Control Number: 10/659,842

Page 6

Art Unit: 1746

Primary Examiner  
Art Unit 1746

bsc

  
SHARIDAN CARRILLO  
PRIMARY EXAMINER